IN THE CLAIMS:

The current claim set of the application is presented below. Indications as to the status of the claims ("original", "currently amended", "cancelled", "new", etc.) appear in parentheses after the claim number. Deletions are identified in bold with double brackets and strikethrough (e.g. **[[~~deletion~~]]**) and new text is identified in bold with underlining (e.g. **new matter**).

1. [Currently Amended] A method for attenuating an immune response **[[~~in a subject~~]]**, comprising:

identifying a subject suffering from or at risk of a disease or disorder mediated by the immune response;

placing at least a portion of a lead comprising an electrode within a tissue of the subject at a location in which stimulation of the tissue by the electrode is capable of stimulating a sympathetic neuron;

applying an electrical stimulation pulse to the tissue via the electrode to stimulate the sympathetic neuron in an amount effective to attenuate **[[~~an~~]]** **the** immune response**,**

wherein the sympathetic neuron is a neuron of a splenic nerve, splenic neurovascular bundle, a periarterial splenic nerve, splenic peritoneum, splenic tissue, celiac plexus surrounding the celiac artery, a celiac ganglion, an aorticorenal ganglion, a greater thoracic splanchnic nerve, a lesser thoracic splanchnic nerve, or a least thoracic splanchinc nerve.

2. (Original) The method of claim 1, wherein a plurality of electrical pulses are applied to the tissue.

3. (Original) The method of claim 1, further comprising implanting a pulse generator within the subject, wherein the pulse generator produces the electrical stimulation pulse and is electrically coupled to the electrode.

4. (Original) The method of claim 1, wherein the electrode is placed in contact with the sympathetic neuron.

5. (Cancelled)

6. (Cancelled)

7. (Cancelled)

8. (Original) The method of claim 4, wherein the sympathetic neuron is a neuron of the splenic nerve.

9. (Original) The method of claim 1, wherein the sympathetic neuron is a neuron of the splenic nerve.

10. (Currently amended) The method of claim 1, wherein the electrode is placed in contact with **[[~~an end organ~~]]** **splenic tissue**.

11. (Cancelled)

12. (Cancelled)

13. (Cancelled)

14. (Cancelled)

15. (Original) The method of claim 1, wherein the immune response is an inflammatory immune response.

16. (Cancelled)

17. (Currently amended) The method of claim **[[~~16~~]]** **1**, wherein the disease or disorder is selected from the group consisting of appendicitis, peptic, gastric and duodenal ulcers, peritonitis, pancreatitis, pseudomembranous colitis, acute ulcerative colitis, chronic ulcerative colitis and ischemic colitis, diverticulitis, epiglottitis, achalasia, cholangitis,

cholecystitis, hepatitis, nosicomial infection, Crohn's disease, inflammatory bowl disease, enteritis, Whipple's disease, diabetes, asthma, allergy, anaphylactic shock, immune complex disease, organ ischemia, reperfusion injury, organ necrosis, hay fever, sepsis, septicemia, endotoxic shock, cachexia, hyperpyrexia, eosinophilic granuloma, granulomatosis, sarcoidosis, septic abortion, epididymitis, vaginitis, prostatitis, urethritis, bronchitis, emphysema, rhinitis, cystic fibrosis, pneumonitis, pelvic inflammatory disease, , alvealitis, bronchiolitis, pharyngitis, pleurisy, sinusitis, influenza, respiratory syncytial virus infection, herpes infection, HIV infection, hepatitis B virus infection, hepatitis C virus infection, disseminated bacteremia, Dengue fever, candidiasis, malaria, filariasis, amebiasis, hydatid cysts, burns, dermatitis, dermatomyositis, urticaria, warts, wheals, vasulitis, cardiovascular disease, angiitis, endocarditis, arteritis, atherosclerosis, thrombophlebitis, pericarditis, myocarditis, myocardial ischemia, periarteritis nodosa, rheumatic fever, rheumatoid arthritis, Alzheimer's disease, coeliac disease, congestive heart failure, adult respiratory distress syndrome, meningitis, encephalitis, multiple sclerosis, cerebral infarction, cerebral embolism, Guillane-Barre syndrome, neuritis, neuralgia, spinal cord injury, paralysis, uveitis, arthritides, arthralgias, osteomyelitis, fasciitis, Paget's disease, gout, periodontal disease, **[[~~rheumatoid arthritis,~~]]** synovitis, Sjogren's syndrome, myasthenia gravis, thryoiditis, systemic lupus erythematosus, lupus erythematosus, Addison's disease, pernicious anemia, Goodpasture's syndrome, Behcets's syndrome, allograft rejection, graft-versus-host disease, Type I diabetes, ankylosing spondylitis, Berger's disease, **[[~~Type I diabetes, ankylosing spondylitis, spinal cord injury,~~]]** Retier's syndrome, Graves disease, and Hodgkins disease

18. (Original) The method of claim 2, further comprising:
sensing a condition, and
modifying a parameter of at least one of the plurality of electrical pulses based on the sensed condition.

19. (Currently amended) The method of claim 18, wherein sensing the condition comprises detecting a characteristic or symptom associated with a disorder or disease associated with **[[~~an~~]]** **<u>the</u>** immune response or stimulation of the one or more neurons.

20. (Currently amended) The method of claim 19, wherein the characteristic or symptom is selected from the group consisting of presence of an immune mediator, an amount of an immune mediator, **and** an objective symptom of the subject.

21. (Original) The method of claim 20, wherein the immune mediator is a cytokine receptor.

22. (Original) The method of claim 21, wherein the cytokine receptor is selected from the group consisting of TNF receptor, IL-1b receptor, and Toll-like receptors.

23. (Original) The method of claim 22, wherein the immune mediator is a chemokine.

24. (Original) The method of claim 23, wherein the chemokine is selected from the group consisting of 6Ckine and MIP3beta.

25. (Original) The method of claim 20, wherein the immune mediator is a chemokine receptor.

26. (Original) The method of claim 25, wherein the chemokine receptor is CCR7 receptor.

27. (Original) The method of claim 20, wherein the immune mediator is a cell type involved in an immune response.

28. (Original) The method of claim 27, wherein the cell type is selected from the group consisting of Langerhans cell, dendritic cell, T lymphocyte, and B lymphocyte.

29. (Original) The method of claim 20, wherein the immune mediator is a cell surface molecule involved in an immune response.

30. (Original) The method of claim 29, wherein the cell surface molecule is selected from the group consisting of major histocompatibility complex (MHC), CD80, CD86, CD28, CD40.

31. (Original) The method of claim 20, wherein the immune mediator is an exogenous antigen.

32. (Original) The method of claim 31, wherein the exogenous antigen is selected from the group consisting of a bacterial antigen, a viral antigen, and a fungal antigen.

33. (Original) The method of claim 20, wherein the immune mediator is a cytokine.

34. (Original) The method of claim 34, wherein the cytokine is a pro-inflammatory or anti-inflammatory cytokine.

35. (Original) The method of claim 34, wherein the cytokine is selected from the group consisting of tumor necrosis factor alpha (TNFα), interleukin (IL)-1α, IL-1β, IL-5, IL-6, IL-8, IL-18, interferony, platelet –activating factor (PAF), macrophage migration inhibitory factor (MIF), high mobility group box protein 1 (HMGB-1), IL-4, IL-10, IL-13, and IL-17.

36. (Original) The method of claim 18, wherein the condition is the presence or amount of transforming growth factor (TGF), platelet-derived growth factor (PDGF), vascular endothelial growth factor (VEGF), epithelial growth factor (EGF), fibroblast growth factor (FGF), intracellular adhesion molecule (I-CAM), subtypes thereof, or nitric oxide.

37. (Original) The method of claim 18, wherein at least one of the one or more conditions is the presence or amount of nuclear factor kappa B (NFκ-B), early growth response protein (ERG-1), a mitogen-activated protein (MAP) kinase, toll-like receptors (TLRs), or a SMAD transcription factor.

38. (Original) The method of claim 18, wherein the condition is selected from the group consisting of white blood cell count, body temperature, degree of swelling, degree of flushing, pain tolerance, and electrical activity of the subject's heart.

39. (Original) The method of claim 18, wherein sensing the condition comprises detecting a condition associated with stimulation of a sympathetic neuron.

40. (Original) The method of claim 39, wherein the sensing the condition comprises detecting a membrane potential of a neuron.

41. (Original) The method of claim 36, wherein the sensing the condition comprises detecting a frequency with which the stimulated neuron undergoes an action potential.

42. (Original) The method of claim 39, the sensing the condition comprises detecting a sympathetic neurotransmitter, or metabolite thereof.

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53. (Cancelled)

54. (Currently amended) A method for **[[~~inhibiting release of a proinflammatory cytokine from a cellin a mammalian subject~~]]** **attenuating an immune response**, comprising:

identifying a mammalian subject suffering from or at risk of a disease or disorder mediated by the immune response;

placing at least a portion of a lead comprising an electrode within a tissue of the mammalian subject at a location in which stimulation of the tissue by the electrode is capable of stimulating a sympathetic neuron; and

applying an electrical stimulation pulse to the tissue via the electrode to stimulate the sympathetic neuron in an amount effective to **[[~~inhibit release of the proinflammatory cytokine from the cell~~]]** **attenuate the immune response, wherein the disease or disorder mediated by the immune response is selected from the group consisting of allergy, anaphylactic shock, immune complex disease, hay fever, sepsis, septicemia, endotoxic shock, cachexia, hyperpyrexia, eosinophilic granuloma, granulomatosis, sarcoidosis, septic abortion, epididymitis, vaginitis, prostatitis, urethritis, bronchitis, emphysema, rhinitis, cystic fibrosis, pneumonitis, pelvic inflammatory disease, alvealitis, bronchiolitis, pharyngitis, pleurisy, sinusitis, influenza, respiratory syncytial virus infection, herpes infection, HIV infection, disseminated bacteremia, Dengue fever, candidiasis, malaria, filariasis, amebiasis, hydatid cysts, burns, dermatitis, dermatomyositis, urticaria, warts, wheals, vasulitis, rheumatoid arthritis, Alzheimer's disease, meningitis, encephalitis, multiple sclerosis, cerebral infarction, cerebral embolism, Guillane-Barre syndrome, neuritis, neuralgia, spinal cord injury, paralysis, uveitis, arthritides, arthralgias, osteomyelitis, fasciitis, Paget's disease, gout, periodontal disease, synovitis, Sjogren's syndrome, myasthenia gravis, thryoiditis, systemic lupus erythematosus, lupus erythematosus, Addison's disease, pernicious anemia, Goodpasture's syndrome, Behcets's syndrome, allograft rejection, graft-versus-host disease, Berger's disease, Type I diabetes, ankylosing spondylitis, Retier's syndrome, Graves disease, and Hodgkins disease**.

55. (Original) The method of claim 54, wherein a plurality of electrical pulses are applied to the tissue.

56. (Original) The method of claim 54, further comprising implanting a pulse generator within the subject, wherein the pulse generator produces the electrical stimulation pulse and is electrically coupled to the electrode.

57. (Original) The method of claim 54, wherein placing the lead comprises placing the electrode in contact with the sympathetic neuron.

58. (Original) The method of claim 54, wherein the sympathetic neuron is a neuron selected from the group consisting of a projection from the brain to the spinal cord; an interneuron; a pre-ganglionic neuron; a ganglion; and a post-ganglionic neuron.

59. (Original) The method of claim 58, wherein the sympathetic neuron is a post-ganglionic neuron.

60. (Original) The method of claim 59, wherein the sympathetic neuron is a neuron of the splenic nerve.

61. (Original) The method of claim 60, wherein the sympathetic neuron is a neuron of the splenic nerve.

62. (Original) The method of claim 54, wherein the sympathetic neuron is a neuron of the splenic nerve.

63. (Original) The method of claim 54, wherein placing the lead comprises placing the electrode in contact with an end organ.

64. (Original) The method of claim 63, wherein the end organ is a lymph organ.

65. (Original) The method of claim 64, wherein the lymph organ is a spleen.

66. (Original) The method of claim 54, wherein placing the lead comprises placing the electrode in contact with tissue of an organ in a peritoneal sac.

67. (Original) The method of claim 66, wherein the organ in the peritoneal sac is selected from the group consisting of pancreas; stomach; and intestine.

68. (Original) The method of claim 54, wherein the proinflammatory cytokine is selected from the group consisting of tumor necrosis factor alpha (TNFα); interleukin (IL)-1α; IL-1β; IL-5; IL-6; IL-8; IL-18; interferony, platelet–activating factor (PAF); macrophage migration inhibitory factor (MIF); and high mobility group protein 1 (HMG-1).

69. (Original) The method of claim 54, wherein the proinflammatory cytokine is selected from the group consisting of TNF-α; IL-1; and IL-6.

70. (Original) The method of claim 54, wherein the proinflammatory cytokine is TNF-α.

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130. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a celiac plexus surrounding the celiac artery.

131. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a splenic neurovascular bundle.

132. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a periarterial splenic nerve.

133. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a splenic peritoneum.

134. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a celiac ganglia.

135. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to an aorticorenal ganglia.

136. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a greater thoracic splanchnic nerve.

137. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a lesser thoracic splanchnic nerve.

138. (New) The method of claim 1, wherein applying the electrical stimulation pulse comprises applying the pulse to a least thoracic splanchinc nerve.

139. (New) The method of claim 54, wherein the disease or disorder is selected from the group consisting of allergy, anaphylactic shock, immune complex disease, hay fever, sepsis, septicemia, and endotoxic shock.

140. (New) The method of claim 54, wherein the disease or disorder is cachexia.

141. (New) The method of claim 54, wherein the disease or disorder is hyperpyrexia.

142. (New) The method of claim 54, wherein the disease or disorder is eosinophilic granuloma.

143. (New) The method of claim 54, wherein the disease or disorder is granulomatosis.

144. (New) The method of claim 54, wherein the disease or disorder is sarcoidosis.

145. (New) The method of claim 54, wherein the disease or disorder is septic abortion.

146. (New) The method of claim 54, wherein the disease or disorder is epididymitis.

147. (New) The method of claim 54, wherein the disease or disorder is vaginitis.

148. (New) The method of claim 54, wherein the disease or disorder is prostatitis.

149. (New) The method of claim 54, wherein the disease or disorder is urethritis.

150. (New) The method of claim 54, wherein the disease or disorder is bronchitis.

151. (New) The method of claim 54, wherein the disease or disorder is emphysema.

152. (New) The method of claim 54, wherein the disease or disorder is rhinitis.

153. (New) The method of claim 54, wherein the disease or disorder is cystic fibrosis.

154. (New) The method of claim 54, wherein the disease or disorder is pneumonitis.

155. (New) The method of claim 54, wherein the disease or disorder is pelvic inflammatory disease.

156. (New) The method of claim 54, wherein the disease or disorder is alvealitis.

157. (New) The method of claim 54, wherein the disease or disorder is bronchiolitis.

158. (New) The method of claim 54, wherein the disease or disorder is pharyngitis.

159. (New) The method of claim 54, wherein the disease or disorder is pleurisy.

160. (New) The method of claim 54, wherein the disease or disorder is sinusitis.

161. (New) The method of claim 54, wherein the disease or disorder is selected from the group consisting of influenza, respiratory syncytial virus infection, herpes infection, HIV infection, disseminated bacteremia, Dengue fever, candidiasis, malaria, and filariasis, amebiasis.

162. (New) The method of claim 54, wherein the disease or disorder is hydatid cysts, burns, dermatitis, dermatomyositis, urticaria, warts, and wheals.

163. (New) The method of claim 54, wherein the disease or disorder is vasulitis.

164. (New) The method of claim 54, wherein the disease or disorder is arthritides or rheumatoid arthritis.

165. (New) The method of claim 54, wherein the disease or disorder is Alzheimer's disease.

166. (New) The method of claim 54, wherein the disease or disorder is meningitis.

167. (New) The method of claim 54, wherein the disease or disorder is encephalitis.

168. (New) The method of claim 54, wherein the disease or disorder is multiple sclerosis.

169. (New) The method of claim 54, wherein the disease or disorder is cerebral infarction or cerebral embolism.

170. (New) The method of claim 54, wherein the disease or disorder is Guillane-Barre syndrome.

171. (New) The method of claim 54, wherein the disease or disorder is neuritis.

172. (New) The method of claim 54, wherein the disease or disorder is neuralgia.

173. (New) The method of claim 54, wherein the disease or disorder is spinal cord injury.

174. (New) The method of claim 54, wherein the disease or disorder is paralysis.

175. (New) The method of claim 54, wherein the disease or disorder is uveitis.

176. (New) The method of claim 54, wherein the disease or disorder is arthralgias.

177. (New) The method of claim 54, wherein the disease or disorder is osteomyelitis.

178. (New) The method of claim 54, wherein the disease or disorder is fasciitis.

179. (New) The method of claim 54, wherein the disease or disorder is Paget's disease.

180. (New) The method of claim 54, wherein the disease or disorder is gout.

181. (New) The method of claim 54, wherein the disease or disorder is periodontal disease.

182. (New) The method of claim 54, wherein the disease or disorder is synovitis.

183. (New) The method of claim 54, wherein the disease or disorder is Sjogren's syndrome.

184. (New) The method of claim 54, wherein the disease or disorder is myasthenia gravis.

185. (New) The method of claim 54, wherein the disease or disorder is thryoiditis.

186. (New) The method of claim 54, wherein the disease or disorder is lupus erythematosus or systemic lupus erythematosus.

187. (New) The method of claim 54, wherein the disease or disorder is Addison's disease,.

188. (New) The method of claim 54, wherein the disease or disorder is pernicious anemia.

189. (New) The method of claim 54, wherein the disease or disorder is Goodpasture's syndrome.

190. (New) The method of claim 54, wherein the disease or disorder is Behcets's syndrome.

191. (New) The method of claim 54, wherein the disease or disorder is allograft rejection or graft-versus-host disease.

192. (New) The method of claim 54, wherein the disease or disorder is Berger's disease.

193. (New) The method of claim 54, wherein the disease or disorder is Type I diabetes.

194. (New) The method of claim 54, wherein the disease or disorder is ankylosing spondylitis.

195. (New) The method of claim 54, wherein the disease or disorder is Retier's syndrome.

196. (New) The method of claim 54, wherein the disease or disorder is Graves disease.

197. (New) The method of claim 54, wherein the disease or disorder is Hodgkins disease.